

**METHOD OF ENABLING AN ELECTRONIC  
COMMUNICATION APPARATUS TO RECEIVE A LONG E-  
MAIL MESSAGE**

**5 BACKGROUND OF THE INVENTION**

The present invention relates to electronic communication apparatus and, more specifically, to a method used in an electronic communication apparatus for enabling the electronic communication apparatus to receive a long e-mail message that  
10 surpasses the set length receivable to the electronic communication apparatus.

In recent years, the designing and development of PDA (Personal Digital Assistant) trend to thinner, lighter and shorter size. In order to satisfy consumers' demand, combining a PDA with  
15 a regular electronic consumer product is the best way to have great success in market competition. For example, a PDA module and a cellular phone module and/or a fax modem module can be combined together to form an electronic communication apparatus having a wireless telephone function and/or fax function. An electronic  
20 communication apparatus with wireless telephone and fax functions can be used to receive e-mail from a server in the Internet. However, an electronic communication apparatus with wireless telephone and fax functions can only receive a limited length of e-

mail message at a time. If the length of the e-mail message under receiving surpasses the maximum length receivable to the electronic communication apparatus, the electronic communication apparatus receives only the maximum allowable length, i.e., if the

5 maximum length receivable to the electronic communication apparatus is 20K, the electronic communication apparatus receives the content of the e-mail message within 20K and, gives an indication of incomplete receiving of the e-mail message when displaying the e-mail message on its display screen. When in the

10 condition of incomplete receiving of an e-mail message, the user may take one of the following two measures. The first measure is to control the electronic communication apparatus to hold the e-mail message in the network server, so that the user can use a computer communication system, for example, a personal computer to

15 download the e-mail message completely for further reading through the monitor of the personal computer. This measure is complicated because the user must use another Internet communication system to receive the e-mail message again. The second measure is not to hold the e-mail message in the Internet

20 server. In this case, the user can only receive a part of the e-mail message. The rest part of the e-mail message becomes missed.

## SUMMARY OF THE INVENTION

The present invention has been accomplished to provide a method of enabling an electronic communication apparatus to receive a long e-mail message, which eliminates the aforesaid problem. The invention enables the electronic communication apparatus to receive a long e-mail message that surpasses the set length receivable to the electronic communication apparatus.

According to one aspect of the present invention, the electronic communication apparatus divides a long e-mail message into segments shorter than the set length receivable to the electronic communication apparatus, and then receives the e-mail message segment by segment.

According to another aspect of the present invention, the electronic communication apparatus is driven to connect stored message segments to form a complete e-mail message after the e-mail message has been completely received from the Internet server. According to the preferred embodiment of the present invention, the method includes the step of driving POP3 (Post Office Protocol 3) of TCP/IP of the network communication software of the electronic communication apparatus to receive the head message of the e-mail message been detected and to send the head message to an upper module block, the step of driving POP3 of the electronic

communication apparatus to receive the e-mail message segment by  
segment subject to the maximum length receivable to the electronic  
communication apparatus, if the length of the e-mail message  
surpasses the maximum length receivable to the electronic  
5 communication apparatus, and then to send the received e-mail  
message segments to the upper module blocks one after another, for  
enabling the upper module block to register the received e-mail  
message segments in corresponding storage zones and to further  
connect the e-mail message segments into a complete e-mail  
10 message.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is an operational flow chart of the present invention.

#### **15 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

The invention is to be used in an electronic communication  
apparatus, which can be a cellular phone, a personal digital  
assistant, or the like.

The electronic communication apparatus comprises a CPU  
20 (central processing unit), which controls normal operation of the  
other electronic elements of the electronic communication  
apparatus, and communicates with an Internet server to receive e-  
mail message subject to TCP/IP (Transmission Control

Protocol/Internet Protocol) in the network communication software installed in the electronic communication apparatus. As illustrated in FIG. 1, the e-mail message receiving procedure includes the steps of:

5 (10) When POP3 (Post Office Protocol 3) of TCP/IP of the network communication software detected the presence of an e-mail message in the internet server, it immediately receives the head message of the e-mail message and sends the head message to the upper module block, and at the same time gives a message, for  
10 example, GETMAILHEAD to the upper module block, enabling the upper module block to process the head message of the e-mail message, and then to use a function to process the e-mail data under receiving;

(11) The upper module block judges, subject to the head  
15 message of the e-mail message, if the length of the e-mail data surpasses the maximum length allowable to the electronic communication apparatus, and then proceeds to the next step if positive, or proceeds to step (17) to receive the data of the e-mail message and then to continue the action of step (16) if negative;

20 (12) Drive POP3 to give a message, for example, GETMAIL-BUFFER FULL to the upper module block, informing the upper module block that the length of the e-mail message surpassed the maximum allowable length, so that the upper module

block divides the e-mail message into segments after receipt of the message from POP3, and then drives POP3 to receive the e-mail message segment by segment subject to the set allowable length and to send the received segments of e-mail message to the upper  
5 module block in proper order, for enabling the upper module block to register the segments of e-mail message in the corresponding storage zones and to inform the user to link the stored segments of e-mail message;

(13) Give a message, for example, GETMAILED to the  
10 upper module block, if the last segment of the e-mail message has been received and detected by POP3, informing the upper module block that all of the segments of the e-mail message have been well received, or continue step (12) if the last segment of the e-mail message has not been received yet;

15 (14) The upper module block judges if to connect all received segments of e-mail message one after another and to store the message in the form of a complete e-mail message, so as to proceed to step (15) if positive, or to proceed to step (16) if negative;

20 (15) Connect all received segments of e-mail message into a complete e-mail message, and then store the message;

(16) Connect the received segments of e-mail message with the head message to form an e-mail message, and then store the

message.

As indicated above, the electronic communication apparatus receives and stores the incoming e-mail message segment by segment subject to a predetermined length, and then connects  
5 the segment data to the head message one after another to form a complete e-mail message, or respectively connects every segment data to the head message to form a complete e-mail message. By means of this message receiving mode, the electronic communication apparatus is free from the limitation of the set  
10 maximum data receiving length and, prevents incomplete receiving of e-mail message.

It is to be understood that the drawings are designed for purposes of illustration only, and are not intended for use as a definition of the limits and scope of the invention disclosed.